# Fenestration Testing Laboratory, Inc.
10235 8th Street, Rancho Cucamonga, CA 91730

Report #: T25-012

## REPORT SUMMARY

**REPORT #**
T25-012

**TESTED FOR**
Styline Doors and Window Systems, Inc.
420 E Easy Street
Simi Valley, CA 93065

**SERIES & PRODUCT TYPE**
2500 with Hidden Sill - THERMALLY BROKEN ALUMINUM SLIDING GLASS DOOR

**CONFIGURATION**
OX

**FRAME SIZE**
3048.00 mm x 3657.60 mm (120.00" x 144.00")

**SPECIFICATION**
NAFS - North American Fenestration Standard/specification for windows, doors, and skylights
AAMA/WDMA/CSA 101/I.S.2/A440-22

**PRIMARY DESIGNATOR**
CLASS LC-PG25 3048.00 x 3657.60 mm (120.00 x 144.00 in) Type: SD

**TEST COMPLETION DATE**
February 27, 2025

**REPORT DATE**
March 13, 2025

**1.0 Tested For:** Styline Doors and Window Systems, Inc.
420 E Easy Street
Simi Valley, CA 93065

**2.0 Purpose:**
The purpose of this report is to present the testing methods employed and the test results obtained during the performance testing of one (1) THERMALLY BROKEN ALUMINUM SLIDING GLASS DOOR
described in paragraph 5.0 of this report.

**3.0 Test References:**
**3.1** NAFS - North American Fenestration Standard/specification for windows, doors, and skylights AAMA/WDMA/CSA 101/I.S.2/A440-17
**3.2** ASTM F 842-17 Forced Entry Resistance Tests for Sliding Door Assemblies
**3.3** CAWM 300-96 Forced Entry Test Resistance Tests for Sliding Glass Doors

**4.0 Compliance Statement:** The test results in paragraph 6.0 indicate that the test sample described in paragraph 5.0 of this report met the performance requirements of the above specifications for the performance grade shown in 4.1 below.
**4.1** CLASS LC-PG25 3048.00 x 3657.60 mm (120.00 x 144.00 in) Type: SD

**5.0 Sample Submitted:**
**5.1 Product Type:** THERMALLY BROKEN ALUMINUM SLIDING GLASS DOOR
**5.2 Series:** 2500 with Hidden Sill
**5.3 Configuration:** OX
**5.4 Product Dimensions:**

| | Millimeters | Inches |
|---|---|---|
| Total Frame: | 3048.00 x 3657.60 | 120.00 x 144.00 |
| Fixed Panel: | 1479.55 x 3613.15 | 58.25 x 142.25 |
| Active Panel: | 1520.95 x 3613.15 | 59.88 x 142.25 |

**5.5 Glass and Glazing:** (The description below applies to both panels)

| *IGU Thickness* | *Spacer Size* | *Interior Lite* | *Exterior Lite* | *Glazing method* |
|---|---|---|---|---|
| 1.25" overall wide | 0.63" | 3/8" Tempered | 1/4" Tempered | An aluminum channel extrusion was applied with silicone to the IGU full perimeter. |

**5.6 Weepage:**

| *Drainage Method* | *Size* | *Quantity* | *Location* |
|---|---|---|---|
| Vertical round weep | 3/8" | Four (4) | Sill had two channels – located at 10" from each end and 33.5" on center. |
| Vertical rectangular weep | 0.75" x 0.38" | Three (3) | Sill had two channels – located at 27" from each end and one at midspan. |
| Round weep | 1/2" | Seven (7) | Sill outside face - 10" from each end and 16.5" on center. |
| The aluminum channel containing the rollers sat in the active channel and had a 0.59" x 0.25" vertical weep punched every 6.5" on center. Additionally, there were a pair of rollers set into punched holes every 6.5" around which water was also able to drain. | | | |
| The door sill did not drain into the pan. | | | |

**5.7 Pressure balancing:** None

**5.8 Weather-stripping:**

| *Type* | *Quantity* | *Location* |
|---|---|---|
| 0.220" overall high polypile with center fin | See "Location" | Active channel- The head, lock jamb, and sill each had two strips with one facing in and one facing out. Fixed channel – The head and sill each had two strips with one strip facing in and one strip facing out. Interlocks – The fixed and active interlocks each had two strips. Aluminum hidden sill snap-in inserts applied to the sill – There were three of these with the inner adapter containing one strip facing out, the center adapter containing one strip facing in and one strip facing out, and the outer adapter containing one strip facing in. |
| 0.440" overall high polypile. | Four (4) | Bottom rail of active panel and bottom rail of fixed panel each contained two strips facing down. |
| Roll-in gasket | Two (2) strips | The jamb fixed channel – roll-in gasket was applied full length on the inside and outside of the fixed stile to fixed channel. |

**5.9 Sealants:**

Sealant was applied at the following locations:
-The three sided pan was set in sealant to the rough opening.
-The sill was sealed to the pan full length on the interior side.
-The inner hidden sill adapter was sealed full length to the sill on the inside perimeter.
-The frame corners were all sealed full profile and an "L" shaped sheet of aluminum set with silicone to each corner and then the sheet was encapsulated in silicone.
-The panel corner were all sealed full profile.
-0.75" thick aluminum plate was set with silicone into each hidden sill adapter and acted as the finished floor surface.
-The fixed panel was sealed on the exterior perimeter to the sill, fixed jamb, and head fixed channels.
-The frame was sealed full perimeter on the exterior to the rough opening.
-The stiles of each panel ran past the rails and the ends of all stiles were sealed over.

**5.10 Hardware:**

| *Type* | *Quantity* | *Location* |
|---|---|---|
| One point metal slide bolt lock | One (1) | The slide lock handle was located on the lock stile 37" from the bottom. The handle slid a metal bolt into the aluminum keeper fastened to the sill with a pair of #10 x 1.06" Allen drive flat head screws to the sill. |
| Rollers in plastic housing | See "Location" | The sill contained an aluminum inverted channel that contained a pair of rollers every 6.5". The rollers came in pairs set in plastic housing that fit into the aluminum channel with the axel of each pair fitting into holes in the sides of the channel. The tops of the rollers fit through holes in the horizontal channel wall every 6.5". Note that the active panel bottom rail contained two strips of 1/8" thick x 0.5" wide brass plates adhered to the bottom of the bottom rail that slid over the rollers. |

**5.11 Construction:**

| *Location* | *Joinery Type* |
|---|---|
| Frame corners | Mitered, keyed with three keys, and fastened through key legs |
| Panel corners | The rails and stiles were structurally bonded to the IGU's and had butted corners with the rails fitting between the stiles. |

**5.11 Construction: (Continued)**

| |
|---|
| The panel lock stile consisted of the aluminum stile extrusion structurally silicone bonded to the glass with a hollow extrusion that snap-fit onto it and contained the locking hardware and integral full length interior and exterior pull handles.<br>The bottom and top ends of the hollow extrusion contained PVC covers at each end. |
| The fixed panel sat on a channel shaped extrusion (like the one in the active channel, but without the rollers) and shim blocks to keep the fixed panel at the same level as the active panel. |
| The fixed interlock and active interlock each consisted of the stile structurally bonded to the glass and an additional extrusion that snap-fin onto it. |
| Three hidden sill extrusion adapters each snap-fit into their respective channel in the sill. Aluminum plate 0.75" thick was set into each adapter to simulate a finished floor. |
| The fixed jamb active channel, the active jamb fixed channel, and the head fixed channel between the fixed panel interlock and active jamb each contained a snap-in channel cover. |

**5.12 Reinforcement:** None

**5.13 Installation:**

| *Location on frame* | *Anchor type* | *Spacing* |
|---|---|---|
| Fastened through the frame at each jamb and at the head with one screw per channel for each of the two channels as described under spacing. No screws through the sill. | #12 x 4" PFH screws | Jambs – a pair 10" from each end and 26" on center in the field.<br><br>Head – a pair 8" from each end and 26" on center in the field. |

**6.0 - Test procedures and results:** All testing procedures were performed in accordance with the performance requirements of the test specifications referenced in paragraph 3.0 of this report. The number preceding each test listed below refers to the corresponding section in the NAFS.

**8.3.1 – Operation Force (ASTM E2068-00(2022))**

| Test Description | Results | Allowed | Comments |
|---|---|---|---|
| Maximum force to initiate and motion | 106.7 N (24.00 lbf) | 155 N (35 lbf) | |
| Latching device force to operate | 26.68 N (6.00 lbf) | 100 N (22.48 lbf) | |

**8.3.2 – Air Infiltration (ASTM E283/283M-19)**

| Test Description | Results | Allowed | Comments |
|---|---|---|---|
| 75 Pa differential pressure | Pass | 1.5 L/s*m² | |
| 1.57 psf differential pressure | Pass | 0.3 cfm/ft² | |
| The tested specimen meets the performance levels specified in AAMA/WDMA/CSA 101/I.S.2/A440 for air leakage resistance. | | | |

**8.3.2 – Air Exfiltration (ASTM E283/283M-19)**

| Test Description | Results | Allowed | Comments |
|---|---|---|---|
| 75 Pa differential pressure | Pass | 1.5 L/s*m² | |
| 1.57 psf differential pressure | Pass | 0.3 cfm/ft² | |
| The tested specimen exceeds the performance levels specified in AAMA/WDMA/CSA 101/I.S.2/A440 for air leakage resistance. | | | |

**8.3.3 – Water Penetration (ASTM E547-00(2016))**

| Test Description | Results | Allowed | Comments |
|---|---|---|---|
| DP25 - 180 Pa (3.76 psf) | No water penetration | No water penetration | 1 |

**8.3.4.2 – Uniform Load Deflection at Design Pressure (DP) (ASTM E330/330M-14(2021))**

| Test Description | Results | Allowed | Comments |
|---|---|---|---|
| DP25 - 1200 Pa (25.06 psf)Pos | 78.23 mm (3.08") | Report only | 2 |
| DP25 - 1200 Pa (25.06 psf)Neg | 80.52 mm (3.17") | Report only | 2 |

**8.3.4.3 – Uniform Load Structural Overload at 1.5 x DP (ASTM E330/330M-14(2021))**

| Test Description | Results | Allowed | Comments |
|---|---|---|---|
| OL for DP25 - 1800 Pa (37.59 psf)Pos | 4.83 mm (0.19") | 11.68 mm (0.46") | 2 |
| OL for DP25 - 1800 Pa (37.59 psf)Neg | 5.08 mm (0.20") | 11.68 mm (0.46") | 2 |

**8.3.5 – Forced Entry Resistance (ASTM F842-17 & CAWM 301-90(1995))**

| Test Description | Results | Allowed | Comments |
|---|---|---|---|
| ASTM F842 Type A D and CAWM Type I | No Entry | No Entry | Grade 10 |

**8.3.6.2 – Deglazing Test**

| Test Description | Results | Allowed | Comments |
|---|---|---|---|
| Active Sash Pull Stile - 320 N (71.94 lbf) | 0% | Less than 90% of glazing bite | |
| Active Sash Rail - 230 N (51.71 lbf) | 0% | Less than 90% of glazing bite | |

Comment #1 - Tested without insect screen.
Comment #2 – Deflection measurement taken from the interlocks.
Testing was witnessed by: Jim Cruz with FTL and Rony Dominguez with Styline

For a complete description of the tested sample, refer to the attached four (4) pages consisting of a bill of materials and cross section drawings. This report is complete only when all the above referenced bill of materials and drawings are attached.

The bill of materials and cross section drawings of frame and sash members are on file and have been compared to the sample submitted. Test sample sections, bill of materials, drawings and a copy of this report will be retained at the test laboratory for four years.

This test report may not be modified in any way without the written consent of Fenestration Testing Laboratory, Inc (FTL).

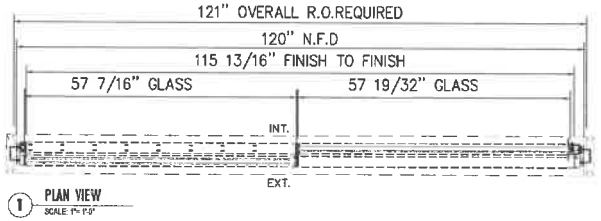
The preceding test results relate only to the tested specimen and were obtained by using the applicable test methods listed in section 3.0 and 6.0 above. This report does not constitute certification of this product or an endorsement by this laboratory. It is the property of the client named in section 1.0 above. Certification can only be granted by an approved administrator and/or validator.

**Test Completion Date:** February 27, 2025
**Report Completion Date:** March 13, 2025

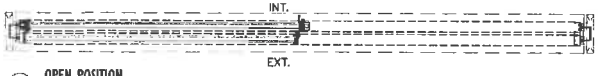
Pete Cruz - Test Engineer

Jim Cruz – Laboratory Manager

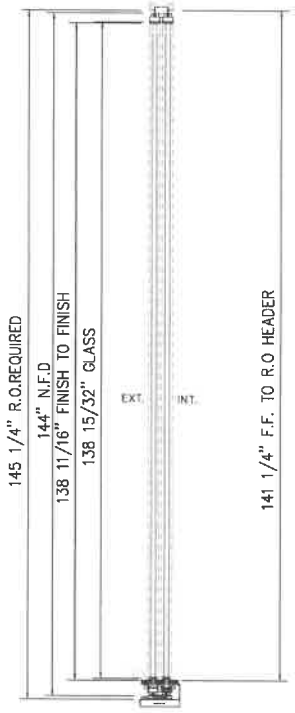
FENESTRATION TESTING LAB
REPORT NO: 725-012
DATE: 3/11/25



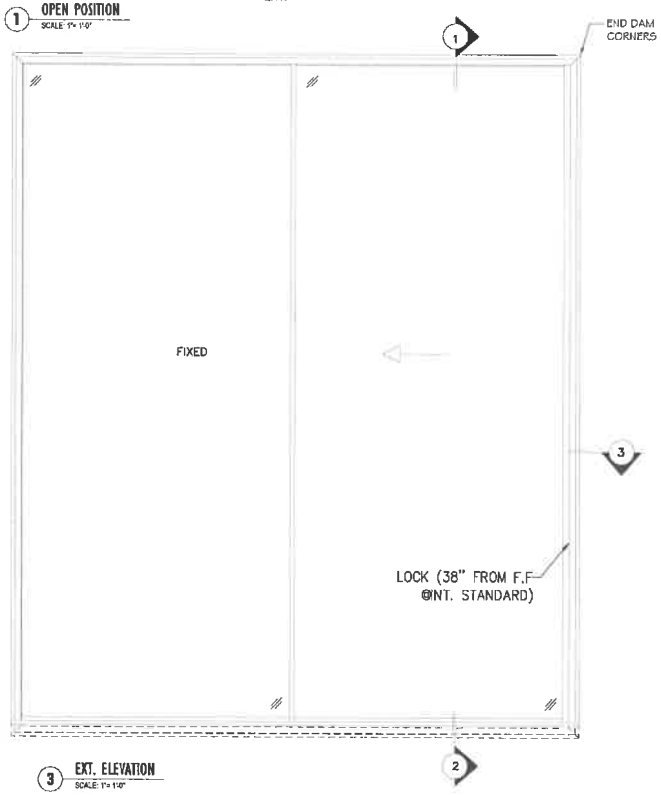

1 PLAN VIEW
SCALE: 1"= 1'-0"




1 OPEN POSITION
SCALE: 1"= 1'-0"




2 VERTICAL SECTION
SCALE: 1"= 1'-0"




3 EXT. ELEVATION
SCALE: 1"= 1'-0"

# 2500 SERIES - HIDDEN SILL

| APPROVAL | |
|---|---|
| SIGNATURE | DATE |

STYLINE DOOR & WINDOW SYSTEMS
THE LEADING MINIMALIST SLIDING DOOR SYSTEMS
MADE IN USA
410 E. EASY STREET, SIMI VALLEY, CA 93065
P. (805) 522-4900
WWW.STYLINE.US

PROJECT
STYLINE TESTING

OFR NO.

CLIENT

ISSUE DATE DRAWN BY

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REVISION - DATE - DRAWN BY

SHEET NO.
3.4

FENESTRATION TESTING LAB
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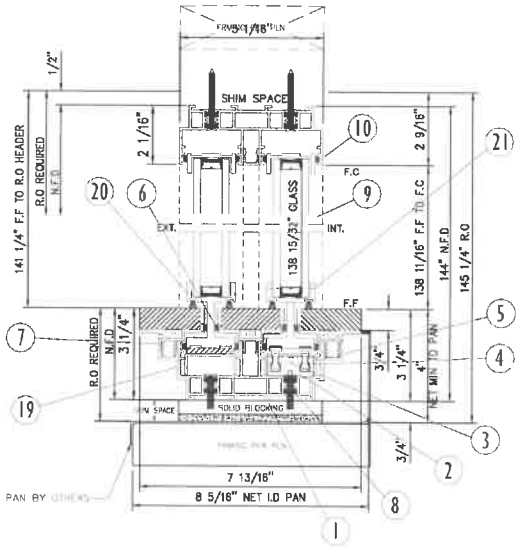
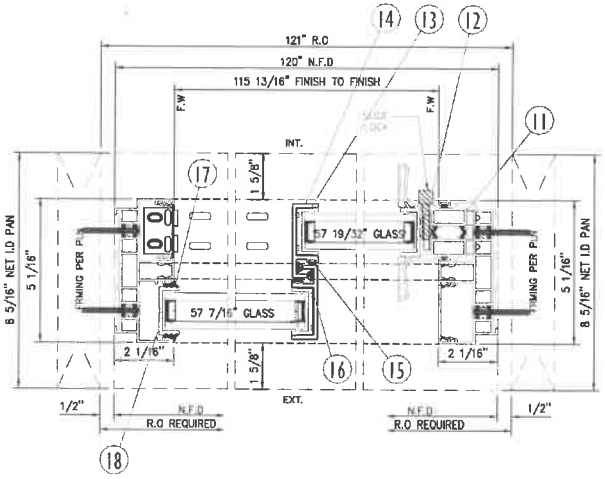
DATE:




SEE Next two pages for Enlarged drawings

| B.O.M. | |
|---|---|
| ITEM # | PART |
| 1 | TH252TRK |
| 2 | STYLINE THERMAL BEARING HOUSE |
| 3 | CARBON FIBER PIN/ROD |
| 4 | 625SS STAINLESS STEEL BEARING |
| 5 | TH25TRK |
| 6 | TH25HTCSK |
| 7 | TH25HTESK |
| 8 | THERMAL STRUT |
| 9 | 1-1/4" IGU |
| 10 | PILE WEATHERSTRIP 270X240 M BLACK |
| 11 | TH25GT2 |
| 12 | LOCKING MECHANISM MAG |
| 13 | TH25SIGC |
| 14 | TH25NHDI |
| 15 | PILE WEATHERSTRIP 187X340 M BLACK |
| 16 | RUBBER BULB VINYL BL-5226 |
| 17 | RUBBER BULB VINYL BL-4966 |
| 18 | TH25GC1 |
| 19 | TH25HTAD |
| 20 | TH25GCHT2 |
| 21 | ASA THERMOPLASTIC BOTTOM SWEEP |

FENESTRATION TESTING LAB
REPORT NO: T25-012
DATE: 3/14/25

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SIGNATURE | DATE

STYLINE DOOR & WINDOW SYSTEMS
THE LEADING MINIMALIST SLIDING DOOR SYSTEMS
MADE IN USA
420 E. EASY STREET, SIMI VALLEY, CA 93065
P. (805) 522-6880
WWW.STYLINE.US

PROJECT
STYLINE TESTING

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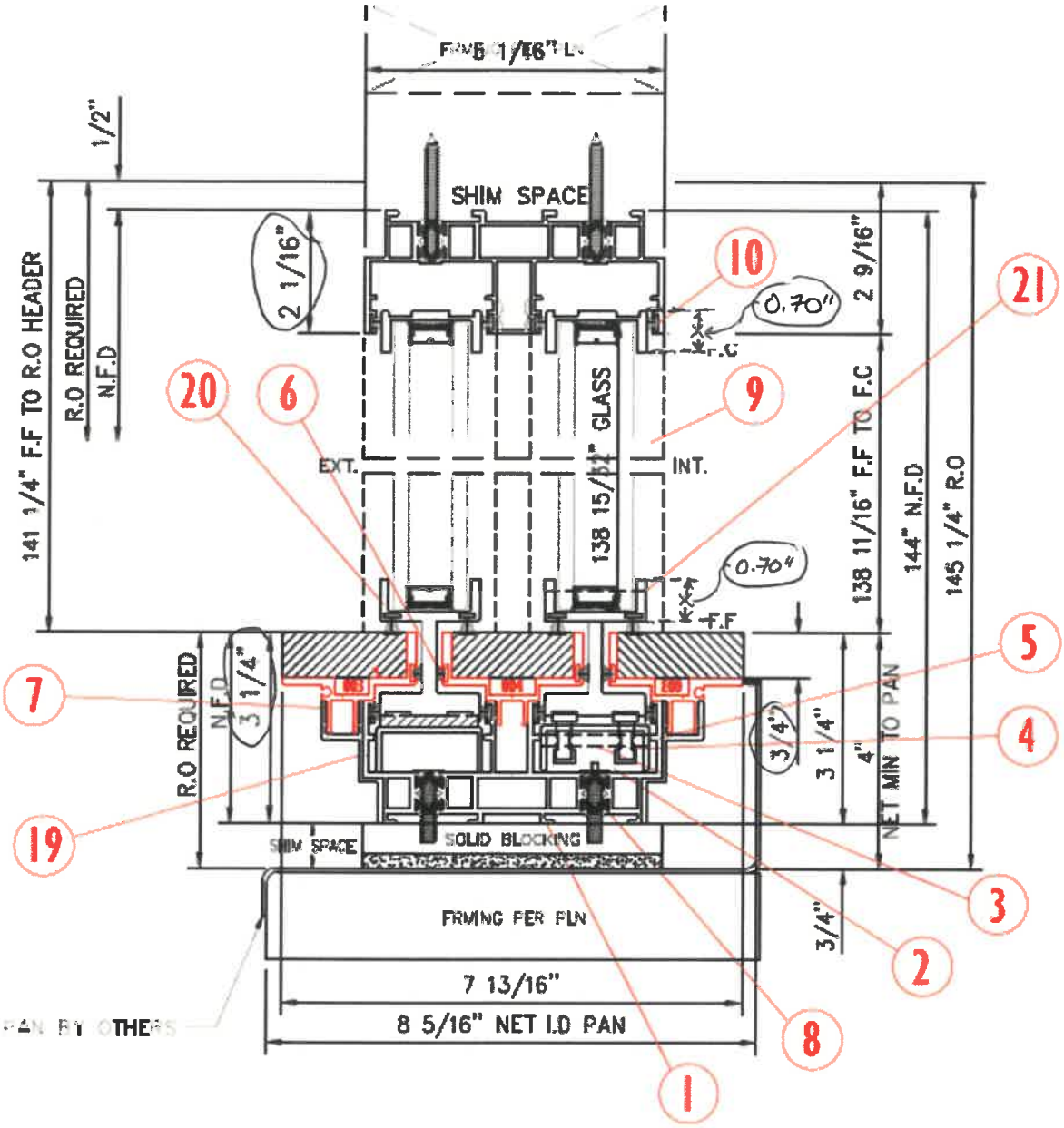
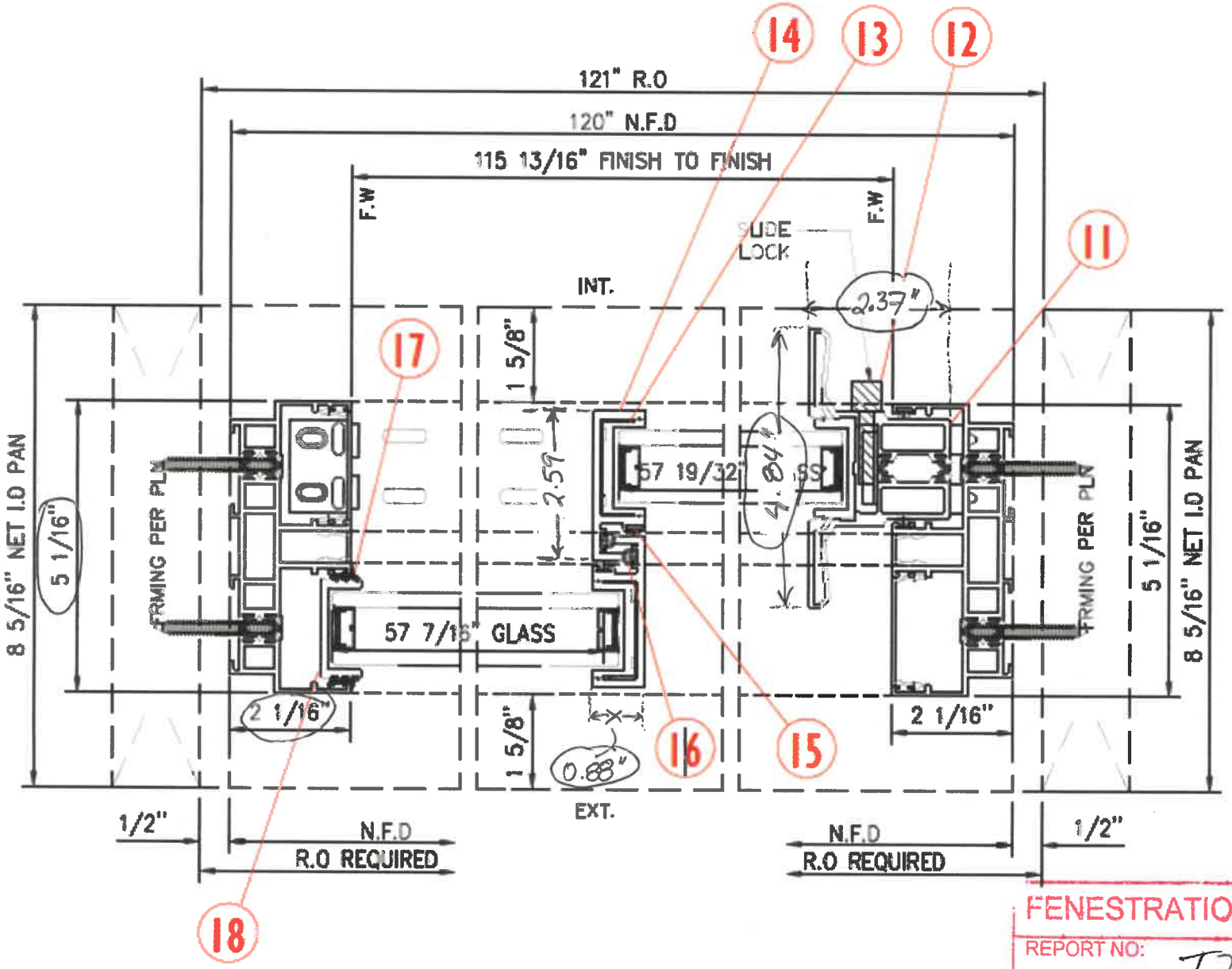
SHEET NO.
3.4D



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